

## ABSTRACT OF THE DISCLOSURE

A method is provided for decalcification of an aqueous solution that has multivalent  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  cations and anions able to form complexes with at least a part of the multivalent cations. The method includes replacing at least part of the anions to form complexes of the aqueous solution by monovalent anions such as  $\text{Cl}^-$ , non-able to form such complexes. The method also replaces at least a part of the multivalent cations of the aqueous solution by monovalent metal cations such as  $\text{Na}^+$  and/or  $\text{K}^+$ . This later replacement step is performed simultaneously with or after the first replacement step.